



Third West Weekly Report Shepherd, Michael

to:

Joyce Ackerman, 'Craig Barnitz (cbamitz@utah.gov)' 01/04/2012 02:10 PM

Hide Details

From: "Shepherd, Michael" < Michael. Shepherd@PacifiCorp.com>

To: Joyce Ackerman/R8/USEPA/US@EPA, "'Craig Barnitz (cbamitz@utah.gov)" <cbamitz@utah.gov>

6 Attachments











Weekly Report 12-27 to 12-30.pdf Third West Weekly Log - 2011-52.pdf 226740-1.pdf 226820-1.pdf 226898-1.pdf



227019-1.pai

Joyce & Craig,

Attached are the reports for the week of December 27, 2011.

All air monitoring results came back negative, except the two positive hits of chrysotile on Wednesday last week.

Please let me know if you have any questions.

Thanks,

Mike Shepherd
Project Manager
Rocky Mountain Power - Major Projects
801.220.4584 Office
801.631.1310 Cell
801.220.2797 Fax
michael.shepherd@pacificorp.com





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

	<u>DAILT CHECKEIST</u>
DATE:_	12/27/11
Gene	oral
<u>3€11€</u>	Work area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
11/1	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior
1471	to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with
	contaminated material.
NA	Confirm return of waste material manifest documents for each load with site
	manager.
NA C	complete all CSHASP Forms (for applicable activities planned for that day)
	IA Illness/Injury Report Form A
	IA Site-Specific Training Record Form C
	IA Hot Work Permit Form D
	Trench/Evacuation Permit Form E
	IA Combined Space Entry Permit From F
₽	
	☐ Decontamination unit is working properly.
	☑ Workers are using decontamination unit as instructed.
	☑ Workers use personal protective equipment properly.
	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation
	sites and track out prevention.
\square	Review sign-in/sign-out log throughout and at the end of the workday.
\square	Secure the site at the end of the workday
Sam	pling
	oil Confirmation sampling for any newly excavated areas
Ø	Stationary Air Monitoring during contaminated soil removal around the perimeter of the
_	exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil
_	removal
NA	Digitally photograph each sample location and at any place field sampling personnel
	determined necessary





		Electronically file photo files into the on-site database
☑		Complete Field Documentation
	\square	Field Sample Data Sheets (FSDS)
	\square	Logbook
	NA	On-site computer database
		Label each sample media with a unique number
abla		Seal sample(s) in zip lock plastic bags
		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
		Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
		Electronically file sample reports into on-site database



3rd West Substation Site Project Safety Audit

Project: 3rd West Sub Station	Date: 12/27/11	
Location:3rd West, 1st South, SLC	Job Number:	
Survey Conducted By: _Justin Kargis	Title:	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	*
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	х			
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			X	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.	g.		x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			х	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

			Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			х	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			х	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	·
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a) (9)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	9
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.	х			
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			х	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	х			
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	х			
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.	х			*
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

7:45 - Exclusion Zone temporarily lifted until 13:15 to accommodate for concrete cut in south east corner and fence adjustment to allow for more space.

10:45 - Miller concrete cutting on site to make saw cut. Finished work by noon.

13:15 - Newman continued excavation, stockpiling, and concrete breaking in EZ. No dump truck loading or hauling today.

Newman finished work by 16:00.



NA .

determined necessary



3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

		DAILT CHECKLIST
DATE:		12/28/11
Gen	eral	
<u> </u>	<u></u>	Work area Health and Safety Inspection
NA		Review and innecessary update Activity Hazard Analyses (AHA) based on planned site
		activities for the day
NA		Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA		Site hazard and safety instruction for all first time employees, contractors or visitors
NA		Complete Employee Meeting Record Form B (where applicable)
NA		Document required Respirator Training completion with Form H
NA		Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA		Confirm return of waste material manifest documents for each load with site manager.
NA (ete all CSHASP Forms (for applicable activities planned for that day)
	NA	Illness/Injury Report Form A
	NA	Site-Specific Training Record Form C
	NA	Hot Work Permit Form D
	NA	Trench/Evacuation Permit Form E
	NA	Combined Space Entry Permit From F
		Exclusion zone operations are practiced as instructed.
'	_	Decontamination unit is working properly.
		✓ Workers are using decontamination unit as instructed.
		✓ Workers use personal protective equipment properly.
~		Workers use personal protective equipment property.
☑		Set air samples at cardinal compass points around exclusion zone. Check
_		throughout the day to ensure proper operation.
		Observe control measures for dust and fugitive materials i.e. watering excavation
		sites and track out prevention.
☑		Review sign-in/sign-out log throughout and at the end of the workday.
Ø		Secure the site at the end of the workday
_		
San	npling	
NA	Soil Co	onfirmation sampling for any newly excavated areas
Ø		Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA		Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil

Digitally photograph each sample location and at any place field sampling personnel





Ø	Electronically file photo files into the on-site database
\square	Complete Field Documentation
\square	Field Sample Data Sheets (FSDS)
$\overline{\mathbf{V}}$	Logbook
NA	On-site computer database
☑ .	Label each sample media with a unique number
\square	Seal sample(s) in zip lock plastic bags
	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
Ø	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
Ø	Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
	Electronically file sample reports into on-site database



3rd West Substation Site Project Safety Audit

Project: 3rd West Sub Station	Date: <u>12/28/11</u>
Location: 3 rd West, 1 st South, SLC	Job Number:
Survey Conducted By: Justin Kargis	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			*
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			x	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	х			
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			х	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	,
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			х	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			х	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

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Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.	*	×	x .	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			х	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			х	
1926.651 (c) (2).	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	,
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			X	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.	x			,
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			х	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	

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1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.	х			
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

Exclusion zone active all day.

Newman workers entered EZ to start and place vehicles but didn't use PPE or decontamination procedures. They came out through the east gate a at around 8:15 and then re-entered through the decontamination unit at around 8:30.

 $\underline{9:00}$ - Eagle Environmental on site to attach reinforced polyester to gaps in EZ perimeter and left about $\frac{1}{2}$ of the roll for future needs.

11:50 - Newman side dump washed out. Only one truck of mixed material hauled out today.

12:45 - Newman removed concrete piers east of new switchgear site. Covered dig site with clean fill. Newman continued to excavate, stockpile, and break concrete.





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

DATE	DAILY CHECKLIST
DATE:	12/29/11
<u>General</u>	
	Work area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
1 17 1	activities for the day
NA ·	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior
	to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with
1 17 1	contaminated material.
NA	Confirm return of waste material manifest documents for each load with site
1111	manager.
NA	Complete all CSHASP Forms (for applicable activities planned for that day)
NA ·	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
NA	Exclusion zone operations are practiced as instructed.
	NA Decontamination unit is working properly.
	NA Workers are using decontamination unit as instructed.
	NA Workers use personal protective equipment properly.
· 🖂	Cot in a subsect and in the consequence of subsect and construction and Charles
	Set air samples at cardinal compass points around exclusion zone. Check
\square	throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention.
\square	Review sign-in/sign-out log throughout and at the end of the workday.
☑	Secure the site at the end of the workday; PacifiCorp Employee
Sampling	· · · · · · · · · · · · · · · · · · ·
NA	Soil Confirmation sampling for any newly excavated areas
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	exclusions zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil
	removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





NA	Electronically file photo files into the on-site database
$\overline{\mathbf{Q}}$	Complete Field Documentation
	Field Sample Data Sheets (FSDS)
☑	Logbook
NA	On-site computer database
\square	Label each sample media with a unique number
	Seal sample(s) in zip lock plastic bags
Ø	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
\square	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental
٠	Samples
	Review and disseminate sample results as received from the laboratories to Project
	Manager and other appropriate managers and employees
NA	Electronically file sample reports into on-site database



3rd West Substation Site Project Safety Audit

Project:	3rd West Sub Station	Date:	12/29/11
Location:	3rd West, 1st South, SLC	Job Number:	
Survey Conducted By:	Jon Craig	Title:	IH Technician

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toeboards shall be installed.			х	
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1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toeboards.			x	
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1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
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1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	х	9		
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
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1926.550 (b)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

CVE is not on site today.

Newman spent the day demolishing concrete in the Southwest area of the exclusion zone. One load of contaminated materials was loaded for disposal at Clean Harbour Exclusion Zone was active today.





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

	DAILY CHECKLIST
DATE:	12/29/11
General	
	Work area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
142 %	activities for the day
NA ·	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA.	Complete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
NA	Exclusion zone operations are practiced as instructed.
	NA Decontamination unit is working properly.
	NA Workers are using decontamination unit as instructed.
	NA Workers use personal protective equipment properly.
☑	Set air samples at cardinal compass points around exclusion zone. Check
_	throughout the day to ensure proper operation.
. 🗹	Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention.
☑	Review sign-in/sign-out log throughout and at the end of the workday.
团	Secure the site at the end of the workday; PacifiCorp Employee
<u>Samplin</u>	<u>g</u>
NA	Soil Confirmation sampling for any newly excavated areas
NA	Stationary Air Monitoring during contaminated soil removal around the perimeter of the
	exclusions zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





NA	Electronically file photo files into the on-site database
	Complete Field Documentation
$\overline{\mathbf{A}}$	Field Sample Data Sheets (FSDS)
$\overline{\mathbf{V}}$	Logbook
NA	On-site computer database
abla	Label each sample media with a unique number
	Seal sample(s) in zip lock plastic bags
\square	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
Ø	Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
NA	Electronically file sample reports into on-site database



3rd West Substation Site Project Safety Audit

Project:	3rd West Sub Station	Date:	12/30/11
Location:	3rd West, 1st South, SLC	Job Number:	
Survey Conducted By:	Jon Craig	Title:	IH Technician

Standard	Title	In Compliance	Out of Compliance	N/A	Corrective Action Taken and Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.	4		x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	*
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.		0	х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toeboards shall be installed.		8	х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

] In Compliance	Out of Compliance] N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.	х			
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	х			
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.	x			
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toeboards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.	х			
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	ř		х	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.	х			
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toeboards when more than 10 feet high and when less than 45 inches of work space.			х	,
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.	x			
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.	х			
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	х			
1926.102 (a) (1)	Eye and face protection shall be provided.	x			×
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.			x	
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a 1/2" fire resistance barrier.	х			

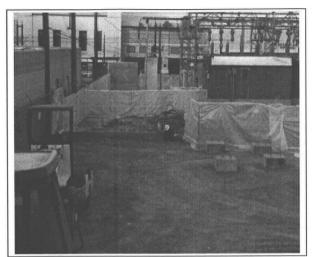
		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			х	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			*
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.			x	
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f) (7)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			х	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.		э	х	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			х .	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

CVE is not on site today.

Newman spent the day excavating in the Southwest area of the exclusion zone. One load of contaminated materials was loaded for disposal at Clean Harbour.

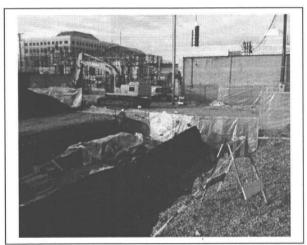
Exclusion Zone was active today.



РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 12/27/2011	FILE:	

SITE PHOTOGRAPHS





PHOTO 1



РНОТО 2



РНОТО 3



РНОТО 4

R & Renvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 12/28/2011	FILE:	

SITE PHOTOGRAPHS





РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R&R Environmental, Inc.

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
CREATED BY: JRWC	DATE: 12/29/2011	FILE:	

SITE PHOTOGRAPHS



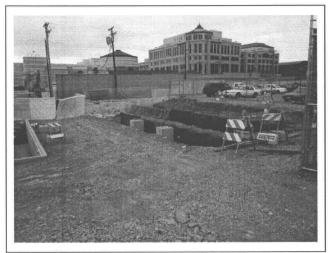


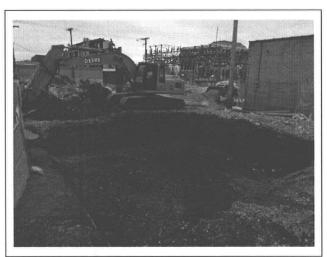
PHOTO 1



РНОТО 2



РНОТО 3



РНОТО 4

R&R Environmental, Inc.

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR
CREATED BY: The state of the st	DATE: 12/30/2011	FILE:

SITE PHOTOGRAPHS



PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME:	Third West	Sub - Rebuild	DATE: Tuesday, December 27, 20				
PO & Work Order NO. :	3000078050 / 10035803		MAIN CONTRACTOR	Cache Valley Electric			
Crew Start Time:	7:00	Crew Stop Time:	17:00	Tot Hrs mns:	10:00		
FCR Start Time:	6:45	FCR Stop Time:	17:10	Tot Hrs mns:	10:25		
Use military time format 00:00	0.40	TON OLOP TIME.	17.10		10.25		
Ose himaly time format 00.00	•						
WEATHER CONDITIONS:		Sunny - 18 deg	ress in AM, 40 degrees in	PM			
DESCRIPTION: (work perform							
R&R set up four monitors. CVE fab of the south end to provide the 3' return provide access for the wall cut and the visqueen was added to the additional was perfonned today. Newman	as required on the ne west end of the	e Demo drawing. Newman switchgear excavation area n continued breaking out co	relocated the fence along the a. The relocation required the	e east side of the e addition of som	e EZ to e panels and		
IF WORKING IN ENERGIZED S	UBSTATION:	·					
Dispatcher login, name and time:	Manny LuHaun	0645					
Dispatcher logout, name and time:	Gus Montanez						
DISCREPANCIES:			IMMEDIATE CORRECTI	VE ACTION TA	KEN:		
11/22 - We found two fdns in the old sub	that were under the	yard rock and not included in	CVE to provide CO for removing	the additional con-	crete.		
the details of concrete to be removed from			0.5				
11/16 - No resolution on the 20' ground rod issue.			CVE to provide per unit price to	drill concrete.			
11/30 - Identified an additional retaining wall that is below grade and does not show on the Demo Plan.			Will excavate to determine dimensions.				
12/14 - Communications battery rack exte			Sent email and pictures to Roge				
indicates that they were fold to croceed with the install by Barry Andersor 12/15 - Excavated to locate the 46 kV cables exiting the west side of the yard. Dug 8' and			acceptable to RMP. Under eval Sent e-mail to Roger F.	uation by Comm G	roup		
didn't find them. Will try again. Actual de			Sent ennan to Roger 1.				
DELAYS OR LOST TIME ENCO			<u> </u>				
				6			
EQUIPMENT (working, delivere	ed. idle):	·					
CVE fab crew: Portable toilet (2), forklift, portable wash-down structure, trachoe (2)	1 dumpster, office to			boom truck (2). Ne	evman:		
OSHA Boordoble Sefety Incid	lamta:		Panarta	l bu	Time		
OSHA Recordable Safety Incid	ents.		Reported	ı by.	Time:		



Russ Johnson

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME:	Third West Sub - Rebuild		DATE :	DATE: Wednesday, December 28, 2011			
PO & Work Order NO. :	3000078050 / 10035803		MAIN CONT	MAIN CONTRACTOR		Cache Valley Electric	
Crew Start Time:	7	:00	Crew Stop Time:	16:30)	Tot Hrs mns:	9:30
FCR Start Time:	6	:40	FCR Stop Time:	16:50	<u> </u>	Tot Hrs mns:	10:10
Use military time format 00:00		.40	TOROLOP TIME.	10.50		1001113111113.	10.10
			,				
WEATHER CONDITIONS:	1		Cloudy, 24 degree	ess in AM, 42 de	grees in the	<u> PM</u>	
DESCRIPTION: (work per	ormed	d, general c	comments, instructions to	contractor,#	of crew me	mbers onsite	.)
R&R set up four monitors. CVE out one tmck with concrete/dirt new switchgear foundation area switchgear foundation in anticip Wiggins and Ben Fowler regard footing over the top of the duct.	to be had to be had to be had be had be had be had been been been been been been been bee	auled to Clea man expects f the CVE fab ir inspection	an Harbors. Newman pulled on to haul out another load on To crew working on the switchg of the 46 kV ductbank to dete	ut the two pier fou hursday and will the ear footings on Tu mine if we are goi	ndations that nen start exc esday, 1/3. I ing to be OK	t were in the w e avating the wes I had conversati	st end of the tend of the ons with Bre chgear
IF WORKING IN ENERGIZI	ED SU	BSTATION	•				
Dispatcher login, name and tim		Gus Montan		·			1
Dispatcher logout, name and tii		Gus Montan					
DISCREPANCIES:				IMMEDIATE C	ORRECTIV	E ACTION TA	KEN:
11/22 - We found two fdns in the ol			the yard rock and not included in	CVE to provide CC) for removing	the additonal con	crete.
the details of concrete to be removed from the site			0.454				
11/16 - No resolution on the 20' ground rod issue.			CVE to provide per unit price to drill concrete.				
11/30 - Identified an additional retaining wall that is below grade and does not show on the Demo Plan.			Will excavate to determine dimensions.				
Demo Plan. 12/14 - Communications battery rack extends into the northeast doorway. Capital Electric indicates that they were told to oroceed with the install by Barry Andersor 12/15 - Excavated to locate the 46 kV cables exiting the west side of the yard. Dug 8' and didn't find them. Will try again. Actual deoth will be much deeper than desian of new bank DELAYS OR LOST TIME ENCOUNTERED:			Sent email and pictures to Roger F to confirm that this conflict is acceptable to RMP. Under evaluation by Comm Group Sent e-mail to Roger F.				
DELAYS OR LOST TIME E	NCOU	INTERED:		· · · · · ·			
EQUIPMENT (working, del							
CVE fab crew: Portable toilet (2), f portable wash-down structure, trad		•		, ,,	, crew truck, b	oom truck (2). Ne	ewman:
OSHA Recordable Safety	Incide	nts:	· · · · · · · · · · · · · · · · · · ·		Reported	bv:	J Time:
					1.000.000	-7:	



Russ Johnson

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME:	Third Wes	DATE: Thursday, December 29, 2011					
PO & Work Order NO. :	3000078050 / 10035803		MAIN CONT	MAIN CONTRACTOR:		Cache Valley Electric	
Crew Start Time:	7:30	Crew Stop Time:	16:20	l	Tot Hrs mns:	8:50	
FCR Start Time:	6:45	FCR Stop Time:	16:40		Tot Hrs mns:	9:55	
Use military time format 00:00					• • • • • • • • • • • • • • • • • • • •		
•							
WEATHER CONDITIONS:	Cloudy, Light Rain, 40 degrees in AM, 59 degrees in PM						
DESCRIPTION: (work perfo	rmed, general c	comments, instructions to	contractor, # o	f crew me	mbers onsite	.) [%] .	
previously, and completed the ren hours. Work to remove these two concrete/dirt that will be delivered	foundations requ	ired three people, two trackhoe	es, and a water tru		n lo aded out o n		
IF WORKING IN ENERGIZED Dispatcher login, name and time: Dispatcher logout, name and time	Manny LuHa	aun 0645	IMMEDIATE CO	OBBECTIVE	E ACTION T		
DISCREPANCIES: 11/22 - We found two fdns in the old s	wh that wars under t	the yard rock and not included in	CVE to provide CO				
the details of concrete to be removed		the yard rock and not included in	CVE to provide CO	ioi ieiliovilig	ine additorial con	ciete.	
11/16 - No resolution on the 20' ground rod issue.			CVE to provide per unit price to drill concrete.				
11/30 - Identified an additional retaining wall that is below grade and does not show on the Demo Plan.			Will excavate to determine dimensions.				
12/14 - Communications battery rack extends into the northeast doorway. Capital Electric			Sent email and pictures to Roger F to confirm that this conflict is acceptable to RMP. Under evaluation by Comm Group				
indicates that they were told to proceed with the install by Bany Andersor 12/15 - Excavated to locate the 46 kV cables exiting the west side of the yard. Dug 8' and			Sent e-mail to Roge		audit by Commit	oroup .	
didn't find them. Will try again. Actua	al deoth will be much		L			_ !	
DELAYS OR LOST TIME EN	COUNTERED:						
	ч						
EQUIPMENT (working, deliv							
CVE fab crew: Portable toilet (2), fort portable wash-down structure, tracket				crew truck, bo	oom truck (2). Ne	ewman:	
OSHA Recordable Safety In	cidents:			Reported	by:	Time:	
TOTAL RECOGNATION OF THE PARTY IN	<u> </u>			portou	-,.		



Russ Johnson

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME:	Third West	Sub - Rebuild	DATE:	Friday	, December 30, 2011		
PO & Work Order NO. :	300007805	0 / 10035803	MAIN CONT	RACTOR :	Cache Valle	y Electric	
Crew Start Time:	7:30	Crew Stop Time:	15:00) ,	Tot Hrs mns:	7:30	
FCR Start Time:	6:50	FCR Stop Time:	15:30)	Tot Hrs mns:	8:40	
Use military time format 00:00		, 01, 010 , 1				0.40	
•							
WEATHER CONDITIONS:		Overcast, 40 deg	grees in AM, 55	degrees in	PM		
DESCRIPTION: (work perfo	ormed, general co	mments, instructions to	contractor, # c	of crew me	mbers onsite.)	
R&R set up four monitors. CVE switchgear. Newman exposed the placement of the switchgear foot Newman starts to place the 1' of Newman = 3, R&R = 1.	ne duct bank and Joh ing over the ductbank	in M ancini (RMP) Engineer e k. He also approved Wilding	examined the mate to witness the pro	erial under thoo	ne duct bank and e excavatiion be	OK'd the fore	
I IF WORKING IN ENERGIZE	D SUBSTATION:						
Dispatcher login, name and time		n 0648					
Dispatcher logout, name and tim							
DISCREPANCIES:			IMMEDIATE C	ORRECTIV	E ACTION TA	KEN:	
11/22 - We found two fdns in the old		yard rock and not included in	CVE to provide CO	for removing	the additonal cond	rete.	
the details of concrete to be removed			C)/F to provide pro-		1-10		
11/16 - No resolution on the 20' grou	ina roa issue.		CVE to provide per	unit price to c	inii concrete.		
11/30 - Identified an additional retain Demo Plan.	ing wall that is below gr	ade and does not show on the	Will excavate to de	termine dimer	isions.		
12/14 - Communications battery rack			Sent email and pict	-			
indicates that they were told to oroce 12/15 - Excayated to locate the 46 k			acceptable to RMP Sent e-mail to Rog		ation by Comm Gr	roup	
didn't find them. Will try again. Actu	ial depth will be much de		Sont e-mail to Rog				
DELAYS OR LOST TIME EN	ICOUNTERED:			•			
			٩		·		
EQUIPMENT (working, deli	vered, idle):						
CVE fab crew: Portable toilet (2), fo portable wash-down structure, tract	rklift, 1 dumpster, office			, crew truck, b	oom truck (2). Nev	wman:	
OSHA Recordable Safety Ir	ncidents:			Reported	bv:	Time:	
			-		1		
		-					



· Russ Johnson



December 29, 2011

Laboratory Code: Subcontract Number:

res Na

Laboratory Report: Project # / P.O. # RES 226740-1 None Given

Project Description:

3rd West Sub - RMP

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 226740-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 226740-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

December 28, 2011

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

December 29, 2011

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ID Ni	umber	Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-122711 S	EM	842327	0.1000	708	ND	0.0054	BAS	BAS
3W-122711 W	EM	842328	0.0900	940	ND	0.0046	BAS	BAS
3W-122711 N	EM	842329	0.0900	938	ND	0.0046	BAS	BAS
3W-122711 E	EM	842330	0.0900	938	ND	0.0046	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity Average Grid Opening in mm² = 0.010 Effective Filter Area = 385 sq mm

Due	Date:_	12234
Due	Tinte:	San

Reservoirs Environmental, Inc.

	6801 Logen St. Osnvor, C Pager : 303-509			303 8	364-19	186 • Fa	× 309-	477-4	1276	- Toll	F re o :	866 R	ESI-E	NV							Page _	1	°	^{,f} —	—
	INVOICE TO: (IF		_	NT)										C	ONTA	CT	NF	ORI	ITAN	ON:					
Company RER Euriponmental	Compeny:					Con	tact:	Da	ve	Ze	ske	16	,				T	Contact	t:						
Address: 47 W 9000 5	Address:					Pho	ne; .										Ī	Phona:							
Sandx W. 81070						Fax	-										7	Fax:			-				
						Cell	/pager	~&	71	54	1-10	35	;				7	Cell/pa	Oar						
Project Number and/or P.O. #:						Fin	al Data	Deliv	/s nabte	Ema	I Addr	38:													
Project Description/Location: 30 West Sub - RARP																									
ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm			98 ())	. Y	R	REQU	EST	ED /	ANA	LY	SIS	176	Ε.	12	u zást,	: V/	۹LI	D:M/	ATR	IX CO	DES		LA	B NOT	ΓES:
PLM / PCM / TEM RUSH (Same Day) PRIORITY (Nex	Day)STANDARD			Γ								П			L	Air	r = <i>F</i>	4	\perp	В	ılk = B	\perp			
(Rush PCM = 2hr, TEM = 6lir		Ĺ				1						П				Dus	it =	D		Pa	int = P	\perp			
CHEMISTRY LABORATORY HOURS: Weekdays: Barn - Spri		1				Į.	! !		-				!	ļ	<u>L</u> _	So	1 = 3	5		W	pe = W				
Mstal(s) / Dust RUSH 24 hr 3-5 Da	у		崔			- 1							i		L_	Swat	= 5	SW		F	= Food	丄			
RCRA 8 / Metals & Welding RUSH 5 day 10 day	Prior notification is required for RUSH	ΙĘ	Quant			ន	H			Ş		- -	8		Drin	kin g \	Vate)r = D	w v	Vaste V	Vater = W	<u>~</u> _			
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2 3W 12274 W				-		70.14			2				7 .	11.7	94			: : i	19	1	14.35.17		<u> </u>	<u>; </u>	7/2
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Number of samples received: (A	dditional samples shall bo listed or	n atta	ched l	ong f	orm.)) ~	_		_																
NOTE: REI wit analyze incoming samples basel woon information received and will analysis sa indicated on this Chain of Custody shall constitute an analytigg services a	not be responsible for errors or omissione in greement with payment terms of NET 30 da	calcula 1ys, fail	ations red lure to co	suidno omply v	front to with pa	he insc symeni i	uracy ermş r	of original	ginal (date. I n a 1.	By-eigr 5% mo	ing cli athly l	ent/od	xrpany i st surcha	represer irge.	tative	agre	es thai	ı submi	issicn of	the following) samp	iss for re	quested	I
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Laboratory Use Only Received By:	Date/Time: (225)(C		>.		Carrie	<i></i>			/ <u>_</u>						Tem	p. (í	F") _		Y	es / No	Yes	i/No	Œ8	; / No
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7-2011_version 1

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

Α	=	Amosite	F	=	Fiber
An	=	Anthophyllite	В	=	Bundle
C	=	Chrysotile .	C	=	Cluster
Cr	=	Crocidolite	M :	=	Matrix
T	=	Tremolite			

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

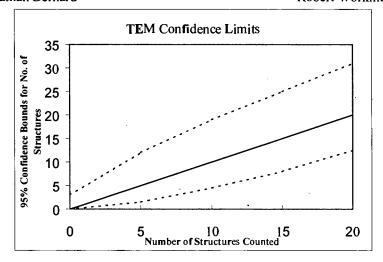
Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron

1.80 length units = 0.5 micron 18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc	
TEM Ashestos Structure Coun	ŧ

Laboratory trame:	REI
Instrument	JEOL 100 CX (N)S
Voltage (KV)	100 KV
Magnification	(20KX)IOKX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

1 CM Assestes of	TOTAL OCULIN
Client :	Rok
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	708
Date received by lab	12 2811
Lab Job Number:	226740
Lab Sample Number:	842327
•	

Analyzed by	JB
Analysis date	12/29/11
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	7
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Pre	ps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grld	Grid Opening	Structure	No. of Str	ructures	Dime	nsions	Identification	Mineral Class				1 = y	= no	
		Туре	Primaty	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H3-3	ND												
	613-3	ND						·						
	F3-3	ND			Pu	10	<u> </u>	75% in	fent	1	0-15% de	1 D 1 5		
	E3-3	ND			Pu	p_	B	80 % in	fant	10	2-15 % Lc	bins		
	C3-B	MD							1					
B	K5-4	ND						1	B	2/20	1/4	}		
	H5-4	NO		-		_		7		/	γ			
	G5-4	ND						7						
	F5-4	ND						·			·			
	E5-4	ND												

<u> </u>	
Laboratory name:	REI
Instrument	JEOL 100 CX (N)s
Voltage (KV)	100 XV
Magnification	20KX IOKX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

TEM ASDESIOS SI	ucture Count
Client :	Rok
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	940
Date received by lab	12/28/11
Lab Job Number:	226740
Lab Sample Number:	842328

Analyzed by	JB
Analysis date	12/29/11
Method (D=Direct, t=Indirect, IA=Indirect, ashed)	
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):		
Fraction of primary fliter used		
Total Resuspension Volume (ml)		
Volume Applied to secondary filter (mi)		

Grid	Grid Opening	Structure	No. of St	ructures	Dime	nsions	Identification	tion Mineral Class		Mineral Class				1 = yes, blank = no		= no
		Type	Primary	Total	Length	Width	identification	Amphibole	C	NAM	Sketch/Comments	Sketch		EDS		
A	F4-6	ND				L		. -								
	E4-6	UD				Pay	A	80 /m 1	ant.		20% of bus					
	4-6	M				Pn	o B	70 % 1	ant	7	hod by					
	E4-4	ND				(<i></i>						
	C4-4	ND						1	\$ 12/	29/11						
	B4-4	ND						//	7	7						
B	F3-4	ND						,								
	K3-4	MD														
	L3-4	ND					·									

Laboratory name:	REI
Instrument	JEOL 100 CX (N)S
Voltage (KV)	100 KV
Magnification	20KX JOKX
Grid opening area (mm2)	0.01
Scale: IL =	0.28 um
Scale: ID =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	Rok
Sample Type (A≖Alr, D≔Dust);	H
Air volume (L) or dust area (cm2)	938
Data received by lab	12/28/11
Lab Job Number:	226740
Lab Sample Number:	342329
· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·

F-Factor Calculation (Indirect Pre	ps Only):
Fraction of primary filter used	
Total Resuspension Yolume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	JB
Analysis date	12/29/11
Method (D=Olrect, l=Indirect, IA=Indirect, ashed)	
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Data Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dime	nsions	Identification	Mineral Class				1 = y	ee, blank	= no
Gild	Grid Opening	Туре	Primary	Total	Length	·Width	Identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K3-1	ND												
	1+3-1	ND		·					<u> </u>					
	G3-1	ND				Pass	A	70/	1 bu	4	7% del	WS		
	H3-10	ND			(m	B	80%	bu	4	7%6	bus		
	613-6	MO		·		0					/ -			
B	K4-3	ND						1B	12/2	alu.				
	H4-3	ND								/				
	G14-3	ND						1						
	F4-3	ND												

Laboratory name:	REI
Instrument	JEOL 100 CX (N)S
Voltage (KV)	100 KV
Magnification	20iX lokx
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.055 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	<u> </u>

12	
Client :	Rock
Samole Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	938
Date received by lab	12 2511
Lab Job Number:	226740
Lab Sample Number:	842330
•	

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	JB
Analysis date	12/29/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	75
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	ructures	Dimer	nsions	Identification	Mineral Class				1 = y	es, blank	- no
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	64-1	M												
<u>'</u>	F4-1	M				مرود	5 A	(00/10)	En F	10	To debus	·		
	E4-1	M				Pm	B	60 %	ant	10	% de bris	 		
	C4-1	ND								·				
	134-1	ND			•			B 12	29/1					
B	E44	ND						7/ /						
	C4-4	ND												
	134-4	ND			L									
	A4-4	ND												

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



December 30, 2011

Laboratory Code: Subcontract Number:

RES

Laboratory Report: Project # / P.O. #

RES 226820-1 None Given

Project Description:

3rd West Sub - RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 226820-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely.

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101890-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 226820-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given Client Project Description:

3rd West Sub - RMP

Date Samples Received: Analysis Type:

December 29, 2011

Turnaround:

TEM, AHERA 24 Hour

Date Samples Analyzed:

December 30, 2011

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ID Ni	umber	Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-122811 S	EM	842844	0.1000	163	1	0.0236	0.0236	10.0
3W-122811 W	EM	842845	0.0900	929	ND	0.0046	BAS	BAS
3W-122811 N	EM	842846	0.0900	927	ND	0.0046	BAS	BAS
3W-122811 E	EM	842847	0.0900	929	1	0.0046	0.0046	11.1

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected BAS = Below Analytical Sensitivity Filter Diameter = 25 mm Effective Filter Area = 385 sq mm

Average Grid Opening in mm² = 0.010

DATA QA

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number:

RES 226820-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description: 3rd West Sub - RMP

Date Samples Received:

December 29, 2011

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

December 30, 2011

Client ID Number	Lab ID No	Lab ID Number		Asl	estos Str	ucture Typ	pes*	Structures >5 Microns in Length	**Excluded Structures	Asbestos Structures for		
			-	Fibers	Bundles	Clusters	Matrices			Concentration		
3W-122811 S	EM	842844	Chrysotile	1	0	0	0	0	0	1		
3W-122811 W	EM	842845	ND	0	0	0	0	0	0	0		
3W-122811 N	EM	842846	ND	0	0	0	0	0	0	0		
3W-122811 E	EM	842847	Chrysotile	0	0	0	1	0	0	1		

^{*}See Analytical Procedure for definitions

^{**}C = Excluded from total due to lack of confirmation

^{**}L = Excluded from total for length less than 0.5 micron (AHERA only)

^{**}A = Excluded from total due to i ncorrect aspect ratio

ND = None Detected

Due Date:_	12-30-11
Due Time:	



	RES	22682	0
Page	1	of	

Pagar : 303-809-8096

	<u> </u>	INVOICE TO: (IF	DIF	FERE	NT)									ONTAC	TIN		MATION:			
Company: V	LIR Environmental	Company:						Da	we_	(Cash	<u>relli</u>	W				Contact				
Address:	47 W 90005	Address:					Phone:								Phooa:					
	Sandy Ut. 84070]	Fax:									Fax:				
						_	Cell/pag	er: 8	10	54ા	-103	5				Cat/pag	jar.			
Project Number	or and/or P.O.#:						Final D	sta Oeliv	/arabk	Email /	Aeerasi	3 .								
Project Descrip	ottonicocetico: 320 West Sub- MP																			
	OS LABORATORY HOURS: Weekdays: 7atn - 7pm			٠.		REC	UES	TED /	ANA	LYS	S]	VAL	ID M/	ATRIX CO	DDES	LAE	NOTES:
PLM / PCM	M / TEMRUSH (Same Day) \(\sump \text{PRIORITY (Next Day)} \)	STANDARD					T	TT	T		T	ТТ	T-		Air =	A	В	Bulk = B		
	(Rush PCM ≈ 2hr, TEM ≈ 6hr.)					11					П)ust=	Ð	P	aint = P	Ope	
CHEMIST	RY LABORATORY HOURS: Weekdays: Sam - 5pm							11			11			L	Soil =	<u>s</u>	W	ipe = W		133001
Metal(s) / C		**Prior notification is		볹	1		1		1.	اءا	11	\perp			vab =			= Food)
	Metals & Welding RUSH 5 day 10 day	required for RUSH	1 5	Quant,	1 1	-	s	11		ig	11	11	۶İ	Drinktn	g Wat	er = D\	W Waste	Water = WW		
Fume Scar	n/ICLP — — —	turnarounds.	8	Հ			8	1	1	월	11		TES SE	<u></u>			≃ Olher			
Organics	24 hr3 day5 Day		Point Count	80.	1 1	1 1	Metalls Scan	11		3	8 8	5	vantrication R NOTES	"AS	NA E1	792 app	xoved wips	media only**	<u> </u>	
	OLOGY LABORATORY HOURS: Weekdays: Sam - 6pm			:=			2	11		_ង ន	2	i ş	٥ <u>ا</u>						<u> </u>	
		3-5 Day	report.	740. O II.	OSHA	otal. Respirable - Analyte(s)	Ē)	11	11	7 8	Quantif	Quantification	ត្ត δ	1	1	1 1		}	<u> </u>	
	a, Listeria, E.coll, APC, Y & M48 Hr3-5 Day		Long			Respirable lyte(s)	2	11.		Quantific	ð ð	E	MONG: +/-, Identifical	1		l I				
Mold		46 Hr3 DayS Day		Level II, o-vac, fi	8	\$ S	8 r					9	\$ S	1	1					
"Turnaroun	nd timaa eatabiish a laboratory priority, subject to laboratory volume end an apply for aftorhoura, waaitanda and holidaya.**	e not guaranteed. Additional feea	Short report,		7	2 5	. <u>\</u>	Salmonella: +/-		Plate C	7 7	ō	ĬĘ	Volume	1					10-11
Casa al bas			ਲ	AHERA, Jant, Mic	8	LS - Anat	3 3	Salmonella: E.coli 0157:1		01	, , ,	1	‡ s	를	Code	50	i	j ł		
Special Ins	structions:		B	\$ §	4	. 2	S	E 3	1	Aerobi E.coik	oliforms Parmens	[3]:		9 9	0	譚	Dale	Time		ber (Labo/atoty
			PLM .	Semire	PCM - 7400A, 7400B,	METALS	ORGANICS - METH	Bu						Sample V((L) / Area	Matrix	# Containers	Collected	Collected	. 0	se Oilly)
	ample ID number (Sample ID's must be unique)		1		15 1	<u> </u>	<u> </u>	 	MIC	ROBIC	oroo,	Y	₩				mm/dd/yy	hh/mun a/o	سننا	
1 3W	-1228115			X						_] . :		Ш	\perp	163	A	$\Box Y$	2/28/U		24	2544
2 3W-	1228(IW)					1 1								1429	Ш				1	45
3 341-	(27811 N				П			Ι.Τ		\top	Π	TT		927	\prod	\Box				4<
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9					 				11	-1-1	LĹ.	1-1	-	—	\vdash	\dashv		<u> </u>		
10				111		. :	<u> </u>		Ľ			Ш		<u> </u>		L_	: : <u> </u>			
	samples received: (Addition	al samples shall be listed oit t	ittac	bsd lo	ng fon	n.)														
NOTE: RE	El will analyza incoming samples based upon information received and win not be ro as indicated on this Chain of Custody shall constitute an analytical agricula agraeuner	eponsible for enous or omissions in ca nt with neument terms of NET 30 days	iculații foli-r	ana resu	illfittfire	an the ins	couracy	of origin	naida ratios	12a. 85y s a 1.5% ≀	igning :	cilant/c	ompany r	epresentativ	e agre	ea that st	ubmission of	the following San	ples for requ	ested
	1 12 67/				-		ط_	_	_	1.074	T POTION.	,	0. 0010010							
Relinquis	shed By: (http://prince	ted Ex			Date/	Time:	212	MI K		_		_		Sa	mple	Conditi	ion: C	On Ice S	ealed	Intact
	ory Use Only	(Time: 122		•	8	50		7		√∈			/	Te	mp. (f	F°)	Yr	es/No Ye	s/No	YES/NO
Resolved By		7 1 11110.		١		Carr								بلب						
		10 1 Time 91200 Initla		_				Phon	_		\rightarrow			Date (<u>ک2</u>	<u>ei(</u>	Time		Initials	- 1
	Contact Phone Email Fax Date	Time Initia	_		ntact				_	mail				Date			Time	B	Initials	· '
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	, , , ,	\circ	7-2	2 0 11_	_vers	ion 1														

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

Α	=	Amosite	F =	Fiber
An	=	Anthophyllite	$\mathbf{B} =$	Bundle
C	=	Chrysotile	C =	Cluster
Cr	=	Crocidolite	M =	Matrix
T	=	Tremolite		

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

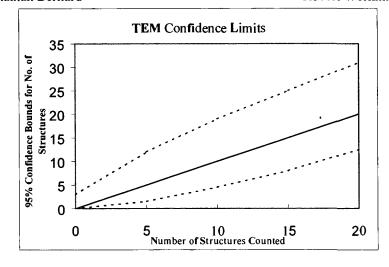
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

l chamber some	ac.
Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Maanification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

Client :	ROR
Samole Tyoe (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	163
Date received by lab	12/29/11
Lab Job Number:	2210820
Lab Sample Number:	842844
F-Factor Calculation (Indirect Pre	eps Only):

Fraction of primary filtar used

Total Resuspension Volume (ml)

Volums Applied to secondary filter

Analyzed by	JB
Analysis date	12/30/11
Method (D=Olrect, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dime	nsions	Identification	Mineral Class				1 = yes, blank = no		
Çilla	Cha Opening	'Туре	Primary	Total	Length	Width	Identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	14-1	ND						·						
	144-1	F		(6		CD		V		*		·	
	G4-1	ND							<u> </u>	·	, ,			
	F-4-1	M			F) Mp.	4 8	Oh int	int	. 5	- 7th del	ms		
	E4-1	ND		 	ρ		3 60	oh in to	nt	5	7% deb	n S		
3	F4-3	ND				**	A					,		
	E4-3	NO						12/30/11						
	F3-3	ND												
	E3-6	ND					/							
	E3-4	W					•					-		

Page	 -4		
rana	 nt		

Reservoirs	Environmental, Inc.
TEM Asbes	tos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L ≖	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	885
Secondary Filter Area (mm2)	
QA Tyoe	

<u> </u>	
Client :	Rak
Samole Tyoe (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	929
Date received by lab	12/29/11
Lab Job Number:	2210820
Lab Sample Number:	842845

Fraction of ptimary tilter used	
Total Resuspension Volume (ml)	
Volume Applied to socondary filtsr (ml)	

Analyzed by	JB
Analysis date	12/30/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting mles (ISO, AHERA, ASTM)	Ald
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Strncture	Nc. of St	ructures	Dime	nsions	Identification	Mineral Class				1 = y	es, blank	:= no
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H36	ND					<u> </u>				·			
	H3-3	ND		! !			a							
	613-6	ND			In	10	60	I com funt	<i>b</i>	5/2	delouis			
	(93-4	ND			Por	B	709	whit	5	-v/	don's			
	F3-4	ND					1				:			
B	612-6	ND			,	1	R 12/301		·					-
	F2-6	ND				1), [-]							
:	E2-10	ND				/							·	
	CZ-10	ND		·			·							

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: IL =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	ROK
Samole Tyoe (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	927
Date received by lab	12/29/11
Lab Job Number:	226820
Lab Sample Number:	842846

Analyzed by	. JB.
Analysis date	12/3c/11
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH _
Grid storage location	Month Analyzed
Scope Alignment	Data Analyzed

Fraction of primary filter used	
Total Resuspension Volume (ml)	_
Volume Applied to Sacondary filter (ml)	_

Grid	Grid Opening	Structiire	No. of St	ructures	Dimer	nsions	Identification	Mineral Class			·	1 = y	es, blank	= no ·
		Туре	Primary	Totai	Length	Width		Amohibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	63-6	ND												
	F3-6	ND		4		A	90%	in but	5%	deh	5			
	E3-6	ND		4	Sus.	B	70%	intant :	50/0	lebre)	-		
	C3-6	MZ				•				,				
	B3-6	ND					, 4							
3	1+3-3	VII			,		1B	2/30/11						
	63.3	ND					// '	1 1"						٠.
	F3-3	W				_ 								
	E3-3	ND									. 3			
								·						

	4	-4					
² age	1	OT.					

Laboratory name:	REI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV_
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Туре	

· Client :	Rak
Sample Tyoe (A=Air, D=Dust):	A
Air yolume (L) or dust area (cm2)	929
Data received by lab	12/29/11
Lab Job Number:	226820
Lab Sample Number:	842847

Analyzed by	JB
Analysis date	12/3c/a
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Fraction of primary filter used	1
Total Resuspension Volume (ml)	
Volume Applied to secondary lilitar (mi)	

Grid	Grid Opening	Stracture	No. of St	mctures	Dime	nsions	Identification	Mineral Class			·	1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	#2-3	ND												
	62-3	ND				Ru	A	80 / ml	m	S	akbus			
	F2-3	V					3	90 Sha int		50/	delons	·		
	E2-3	. D					•	·	- P					
	C2-3	V D									:			
3	K3-4	M			2		(D		1		•			
	H3-4	ND						/						٠
	63-4	M					A	1/						
	F3-4	ND					4	12/30/11		·			-	
							.//			<u>.</u>			·	

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\# \text{ Asbestos Structures}}{\# \text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



January 2, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 226898-1 None **G**iven

Project Description:

3rd West Substation

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 226898-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0215

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 226898-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description: Date Samples Received:

3rd West Substation

Analysis Type:

December 30, 2011

Turnaround:

TEM, AHERA 24 Hour

Date Samples Analyzed:

December 30, 2011

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ID No	umber	Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W1229-N	EM	843363	0.0800	1072	ND	0.0045	BAS	BAS
3W1229-S	EM	843364	0.0800	1070	ND	0.0045	BAS	BAS
3W1229-E	EM	843365	0.0800	1070	ND	0.0045	BAS	BAS
3W1229-W	EM	843366	0.0800	1072	, ND	0.0045	BAS	BAS
Blank	EM	843367	NA	0	. NA			
Blank	EM	843368	NA	0	NA			

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected BAS = Below Analytical Sensitivity Filter Diameter = 25 mm Effective Filter Area = 385 sq mm

Average Grid Opening in mm² = 0.010

Due Date:_	12-01-11
Due Time:	&22×

Reservoirs Environmental, inc.

RES 226898

S881 Logen St. Denses, CO 80216 • Ptr. 303 964-1986 • Fax 303-477-4375 • Toll Pree :888 RESI-ENV INVOICE TO: (IF DIFFERENT) CONTACT INFORMATION: Contact: hone: Cell/pager. Project Number and/or P.O. #: Final Data Deliverable Final Address:
DAVEORFEHVIRO, COM Project Description/Location: *2 ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm REQUESTED ANALYSIS **VALID MATRIX CODES** LAB NOTES: PLM | PCM (TEM) RUSH (Same Day) Z PRIORNY (Next Day) STANDARD Air = A Bulk = B (Rush PCM = 2hr, TEM = 6hr.) Dust = D Paint = P CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm Soil = S Wipe = W RUSH 24 hr. 3-6 Day Metal(s) / Dust F = Food Swab = SW Quant **Prior notification is RCRA 8 / Metals & Welding Drinking Water = DW | Waale Water = WW raquirad for RUSH Point Count _RUSH ___ 5 day ___ 10 day Furme Scan / TCLP Preps. O = Other tumerounds.** **ASTM E1792 approved wipe madia only** 24 hr. __3 day ___5 Day Organics 8 MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - Spm E.coll O157:H7, Colifonne, S.aureus 24 hr. 2 Day 8 ₩ __3-5 Day Salmonella, Listeria, E.coll, APC, Y & M 48 Hr. RUSH _24 Hr ___48 Hr __ _5 Day Mold 3 Day **Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, wackands and folidays." Matrix Code Special Instruellona: EM Number (Laboratory Date Time Use Only) Collected Collected Client sample ID number (Sample ID's must be unique) MICROBIOLOSY mm/dd/yy hh/mm a/p 3 4 66 68 8 9 10 Number of samples received: (Additional samples shall be listed on attached long form.) 'NOTE: REI wit analyza Incomino asmples based upon information rocetod and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing clianticompany reprin offination rocelyod and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing cliant/company repretentative agrees that autimission of the following samples for requested Relinguished By: Date/Time: Sample Condition: On ice Sealed intact Laboratory Use Only Temp. (F°) Yes / No Yes / No (Pes / No (2001) @ 555-Carrier Date/Time: Received By Results: Time X : 50 P |Contact | Phone Email Fax Date (2/3D initiels & Conlact Date Phone Email Fax Time Iniliais

/Phone Email Fax Date Time Initials Contact Phone Email Fax Contact Date Time Initials 4, 6675 BB2E 4567

7-2011_version 1

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

A = Amosite	F = Fiber
An = Anthophyllite	B = Bundle
C = Chrysotile	C = Cluster
Cr = Crocidolite	M = Matrix
T - Tramalita	

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

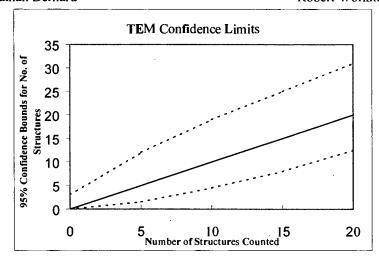
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Maanification	(20KX) 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

Client :	RHR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	1070
Date received by lab	12/36/11
Lab Job Number	226898
Lab Sample Number	843364
3	

Analyzed by	W
Analysis date	12/30/11
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect P	reps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to sacondary fillsr	

Grid	Grid Opening	Structure	No. of St	ructures	Dime	Dimensions Identific		Mineral Class	š .			1 = yes, blank = no		
	Gird Opolium	Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	145-3	M					·							
	H5-3	N0					Pra A	907-IN	act	157	loled no			
	95-3	ND.					Prer	B 190%1	naac	و ہ	delas			
	P5-3	M						In	Ka	2 1	130/11			
В	93-3	W									,			
	\$3.3	ND												
	43-3	M										٠.		
	c 3-3	NY												
													·	

Laboratory name:	REI
Instrument	JEOL 100 CX N S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	<u> </u>

RTR
A
1072
12/30/11
226898
843363

Lab Sample Number:	843363
F-Factor Calculation (indirect P	Preps Only):
Fraction of primery filter used	
Total Raauspansion Volume (ml)	
Volume Applied to secondary filter	

Analyzed by	ell
Analysis date	12/30/11
Method (D=Direct, i=Indirect, IA=Indirect, ashed)	0
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dimer	nsions	Identification	Mineral Class				1 = yes, blank = no		= no
	J Sporting	Туре	Primary	Total	l_ength	Width		Amphibole	С_	NAM	Sketch/Comments	Sketch	Photo	EOS
A	F5-1	ND						•						
	25-1	M					Pres A	~ 90% in	ner	~57.	lebrs			
	C5-1	MO					Prox	~ 90% in	m/0	12 سر	150/11			
	135-1	ND												
B	F4-4	M												
	944	ND												
	CULY	M					·							
	B4-4	NO												
									·					
														, .

Laboratory name:	REI
instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area	385
Secondary Filter Area	
QA Tyoe	

RHR
A
1070
12/36/11
226898
843364

Analyzed by	W
Analysis date	12/30/11
Method (D=Direct, I=Indiract, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Pr	eps Only):
Fraction of primary filter used	
Total Resuspension Volume (mt)	
Voluma Applied to secondary filter (ml)	

Grid	Grid Opening	Structure	No. of St	ructures	Dimensions		Identification	Mineral Class				1 = yes, blank = no		
		Туре	Primaty	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	14:-3	NO												
	H5-3	1/10					Pra A	907-IN	act	157	ideAns			
	95-3	ND.					Prer	B 190%,	Mac	ورح	delars delars			
	45-3	Ma						In	16	2 1	130/11			
В	93-3	M												
	43.3	NO												
	43-3	M					·					÷.		
	c 3-3	N		·										
													·	•
												-		

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mtn)

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, s/mm² = #Asbestos structures Area Analyzed (mɪtı²)

GO = TEM grid opening



January 4, 2012

Laboratory Code: Subcontract Number: Laboratory Report: Project # / P.O. #

Project Description:

NA RES 227019-1 None Given RMP - 3rd West

Substation

RES

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 227019-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 227019-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description: Date Samples Received:

RMP - 3rd West Substation

January 3, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

January 4, 2012

Client	Lab		Area	Äir	Number of	Analytical	Asbestos	Filter
D Number Analyzed		Volume Sampled			Concentration	Loading		
			(mm²)	(L)		(s/cc)	 (s/cc) 	(s/mm²)
3W1230-N	EM	84405 9	0.0800	1042	ND	0.0046	BAS	BAS
3W1230-S	EM	844060	0.0800	1038	ND	0.0046	BAS	BAS
3W1230-E	EM	844061	0.0800	1038	ND	0.0046	BAS	BAS
3W1230-W	EM	844062	0.0800	1046	ND	0.0046	BAS	BAS
Blank	EM	844063	NA	0	NA			
Blank	EM	844064	NA	0	NA			

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected BAS = Below Analytical Sensitivity Filter Diameter = 25 mm Effective Filter Area = 385 sq mm

Average Grid Opening in mm² = 0.010

DATA QA

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number:

RES 227019-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

RMP - 3rd West Substation

Date Samples Received:

January 3, 2012

Analysis Type:

TEM, AHERA

Turnaround:

Date Samples Analyzed:

24 Hour January 4, 2012

Client ID Number	Lab ID Ni	umber	Asbestos Mineral	A . 4	t St-			Structures >5 Microns in Length	**Excluded Structures	Asbestos Structures
			-	Fibers		ucture Typ Clusters		in Length		for Concentration
3W1230-N	EM	84405 9	ND	0	0	0	0	0	0	0
3W1230-S	EM	844060	ND	0	0	0	0	0	0	0
3W1230-E	EM	844061	ND	0	0	0	0	0	0	0
3W1230-W	EM	844062	ND	0	0	0	0	0	0	0
Blank	EM	844063	NA							
Blank	FM	844064	NA							

^{*}See Analytical Procedure for definitions

^{**}C = Excluded from total due to lack of confirmation

^{**}L = Excluded from total for length less than 0.5 micron (AHERA only)

^{**}A = Excluded from total due to i ncorrect aspect ratio

ND = None Detected

Due	Date:	1-2-12
Due	Time:	J254

REILAS Reservairs Environmental, Inc. 8801 Logan St Denver, CO 60216 · Ph; 303 984-1988 · Fax 303-477-4278 · Toll Free : 966 RESHENV

8601 Logan St. Deniver, CO 50216 • Ph: 303 984-1968 • Fax 303-477-4278 • Toll Free :969 RESHENV
Pager : 303-599-2098

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Sandy Util 940+0							Fex:											Fax					
								ager;		r								Cell	pager:				
ject Number and/or P.O. #:							Fina	Data	Delvar	rebie E	email A		## 	4/	CRO	0 /							
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(Rush PCM = 2hr, TEM = 6hr.)		ì				1	. 1	İ		11	1			۱ ۱	f		Dust	= D	$\neg \uparrow$	P	Paint = P		
HEMISTRY LABORATORY HOURS: Weekdays: 8am - Spm	a ARAND BALDERIA.		1		1	1	-{-}	ſ		1	ì	11	1	1	Ì		Soll	= S		W	/ipe = W	1/	
etal(s) / Dust RUSH 24 hr 3-5 Day						- [ļ					-	!	ł		wab		,		= Food		
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Ime Scan / TCLP RUSH 5 day10 day	raquired for RUSH	- 1	ğ	or 20	1 1	- }	Scal	Ì			3	1 }	- 1	iş.	y l	D-1111			0 = 0		******	"	
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coli O157:H7, Coliforms, S.aureus 24 hr. 2 Day	3-5 Day	37,5 53	report	- jg	_			- }			히퉏	1 S	활활	ð	五					•	1		
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old RUSH _24 Hr	•	Day	8	Ξ		윤	<u> </u>		14	()	E E	0	이혈		Ö		-		1				
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Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type A = Amosite An = Anthophyllite C = Chrysotile Cr = Crocidolite Structure Types F = Fiber B = Bundle C = Cluster M = Matrix

T = Tremolite

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

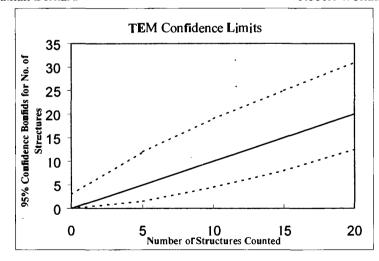
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

_		_		
Page	1	of		

•	Reservoirs Envi	•
		TON

Laboratory name:	RÉI
Instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	2010 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

TEN MODESTUS OF	actare count
Client :	Rork
Sample Type (A=Alr, D=Dust):	A
Air volume (L) or dust area (cm2)	1042
Date received by lab	1/3/12
Lab Job Numben	227019
Lab Sample Number:	844059
Las Campo Namos.	1 9-1-40 3 7

F-Factor Calculation (Indirect Preps Only):							
Fraction of primary filter used							
Total Resuspension Volume (ml)							
Volume Applied to secondary filter (ml)							

Analyzed by	JB
Analysis date	1/4/12
Method (D=Dircct, l=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	filonth Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Stracture	No. of St	ructures	Dimer	nsions	Identification	Mineral Class				1 = yes, blank = no		
		Туре	Primary	Total	Length	Width		Amphibole	Amphibole C N		Sketch/Comments	Sketch	Photo	EDS
A	H3-3	ND								· .				
	43-3	ND				L	 							
	F3-3	ND			Pn	PA	86%	intent	3-5	ho d	ebus			
	E3-3	ND			Pun	b B	80%	intrut	l	% de	<i>V</i> ,			
	13-3	ND			,									
B	H4-4.	ND						B	14/12					
	624-4	ND						77	177					
	F4-4	ND						/						
				·				·			÷			

Laboratory name:	REI
instrument	JEOL 100 CX (N) S
Voltage (KV)	100 KV
Magnification	20K) 10KX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 10 =	0.056 um
Primary filter area (mm2)	385
Secondary Fitter Area (mm2)	
QA Type	

Client :	Rark
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	1038
Date received by lab	1/3/12
Lab Job Number:	227019
Lab Sample Number:	544060

Frection of primary filter used	-	
Total Resuspension Volume (mi)		_
Volume Applied to secondary tilter (mi)		_

Analyzed by	JB
Analysis date	1/4/12
Method (D=Oirect, l=Indirect,	
IA=Indirect, ashed)	
Counting miles	All
(ISO, AHERA, ASTM)	<u> </u>
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Qrid Opening	Structure	No, of St	ructures	Dimer	nsions	Identification	Mineral Class				1 = y	es, blank	= no
J.10	Gild Optiming	Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EOS
4	H3-6	ND												
	636	ND				1								
	F3-6	ND			Rus	A	806	einfant	- 7	70/ /a,C	lems			
į	E3-6	ND			Ric	B	60	In hust	7	0/0	phis			
3	H5-4	2			/					~				ļ
	65-4	ND												
	F5-4	W									P			
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											·			

REI
JEOL 100 CX (N) S
100 KV
2010 LOKX
0.01
0.28 um
0,056 um
385

QA Type

Reservoirs	Environmental, Inc.
TEM Ashas	fos Structure Count

Client:	Rank
Sample Type (A=Air, D=Dusi):	A
Air volume (L) or dust area (cm2)	1038
Date received by lab	1/3/12
Lab Job Number:	227019
Lab Sample Number:	544061

Analyzed by	<u> </u>
Analysis date	1/4/12
Method (D=Olrect, i=Indirsct, IA=Indirect, ashed)	B
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scops Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):						
Fraction of primary titler used						
Tots) Resuspension Volume (ml)						
Volume Applied to secondary litter (ml)						

Grid	Grid Opening	Stmcture	No. of Str	nctures	Dimer	nsions	Identification	Mineral Class				1 ≈ y	es, blank	= no
		Туре	Primary	Total	Length	Width		Amphibole	С_	NAM	Sketch/Comments	Sketch	Photo	EDS
A	FC-1	ND					a	•						į
	F5-1	NP			R	ν 2	A 70	1/2 shout		50/2	Johns			
	L5-1	ND		. ,	R		60	In land	5	0/1	bris			
	B5-1	ND						4						
3	142-3	ND						B 1/4/12						
	H2-3	ND												
	623	ND					/ /							
	F2-3	ND		· 			·							
											·			

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race.	10	•	

Laboratory name:	REI
Instmment	JEOL 100 CX (N S
Voltage (KV)	100 KV
Magntfication	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D=	0.058 um
Primary filter area (mm2)	388
Secondary Filter Area (mm2)	
QA Type	

	Oponi
Client :	Rark
Sample Type (A=Air, D=Dust):	A .
Air volume (L) or dust area (cm2)	1046
Date received by lab	1/3/12
Lab Job Number:	227019
Lab Sample Number:	544062
·	

Analyzed by	JB
Analysis date	1/4/12
Method (D=Oirect, I≈Indirect, IA=Indirect, ashed)	D
Counting mies (ISO, AHERA, ASTM)	Alf
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Pr	eps	Ónl	y):_		
Fraction of primery filter used					
Total Resuspenskim Volume (ml)	1				
Volume Applied to secondary filter (mi)		,	_		

Grid	Grid Opening	Stracture	No. of Structures		Dimensions		Identification	Mineral Class			1 = yes, blank = no			
		Туро	Primary	Total	Length	Width	Idominiodion	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K4-1	ND									·		·	
	H4-1	ND			. (P 2	A	70 hein	funt	<u> </u>	Lo dehn	-	·	
	64-1	WD					B	90%	Fast	5	of debus			
	F3-1	ND			,	1		. 70						
Ь	614-4	MD											·	
~ 	F4-4	W												.
	E4-4	ND						15/4	K					
	C4-4	ND												

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviadon from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening